

	Type	L #	Hits	Search Text	Dbs	Time Stamp	Comments	Error Definition	Errors
1	BRS	L1	67	galectin-3	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:49			0
2	BRS	L2	8775	extracellular adj matrix	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:42			0
3	BRS	L3	2575	(glomerular adj nephritis) or (diabetic adj nephropathy) or (tissue adj fibrosis)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:42			0
4	BRS	L4	62	2 same 3	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:43			0
5	BRS	L5	23	2 same 3 same inhibit\$3	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:43			0
6	BRS	L6	40	4 same (accumulat\$3 or produc\$4)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:44			0
7	BRS	L7	1	1 same 2 same 3	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:45			0
8	BRS	L8	9	1 same 2	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:45			0
9	BRS	L9	3	1 same 2 same inhibit\$3	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:47			0
10	BRS	L10	26	1 same inhibit\$3	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:48			0
11	BRS	L11	3	10 same 2	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:48			0
12	BRS	L12	36	galectin-3 same binding	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:49			0
13	BRS	L13	3	12 same inhibitor	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:51			0
14	BRS	L14	310	sasaki adj satoshi.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:52			0
15	BRS	L15	24	sumi adj yoshihiko.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:52			0
16	BRS	L16	0	hughes adj reginald.in.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:53			0

	Type	L #	Hits	Search Text	DBs	Time Stamp	Comments	Error Definition	Error Count
17	BRS	L17	0	(14 or 15) and 1	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/12/2 0 13:53			0

FILE 'HOME' ENTERED AT 13:55:45 ON 20 DEC 2002

=> file medline caplus biosis embase scisearch agricola

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

FILE 'MEDLINE' ENTERED AT 13:56:06 ON 20 DEC 2002

FILE 'CAPLUS' ENTERED AT 13:56:06 ON 20 DEC 2002

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FILE 'AGRICOLA' ENTERED AT 13:56:06 ON 20 DEC 2002

=> s galectin-3

L1 1971 GALECTIN-3

=> s l1 (p) inhibit?

L2 479 L1 (P) INHIBIT?

=> s (extracellular matrix) or (collagen adj IV)

L3 155632 (EXTRACELLULAR MATRIX) OR (COLLAGEN ADJ IV)

=> s (glomerular nephritis) or (diabetic adj nephropathy) or (tissue fibrosis)

L4 1922 (GLOMERULAR NEPHRITIS) OR (DIABETIC ADJ NEPHROPATHY) OR (TISSUE FIBROSIS)

=> s l3 (p) l4

L5 226 L3 (P) L4

=> s l5 (p) l1

L6 1 L5 (P) L1

=> d l6 1 ibib abs

L6 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2000:116925 CAPLUS

DOCUMENT NUMBER: 132:165131

TITLE: Pharmaceutical composition having inhibitory effect on overproduction and accumulation of extracellular matrix

INVENTOR(S): Sasaki, Satoshi; Sumi, Yoshihiko; Hughes, Reginald Colin

PATENT ASSIGNEE(S): Teijin Limited, Japan

SOURCE: PCT Int. Appl., 29 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000007624	A2	20000217	WO 1999-JP4238	19990805
WO 2000007624	A3	20000622		

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ,

TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ,  
MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK,  
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG,  
CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 9950653 A1 20000228 AU 1999-50653 19990805

EP 1104307 A2 20010606 EP 1999-935073 19990805

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO

JP 2002522398 T2 20020723 JP 2000-563306 19990805

PRIORITY APPLN. INFO.: JP 1998-233499 A 19980806

WO 1999-JP4238 W 19990805

AB A pharmaceutical compn. having an inhibitory effect on the overprodn. and  
the accumulation of \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\*, said compn.  
comprising as an active ingredient a compd. that inhibits the biol.  
activity of \*\*\*galectin\*\*\* - \*\*\*3\*\*\*, which pharmaceutical compn.  
can serve as a therapeutic or preventive agent for \*\*\*glomerular\*\*\*  
\*\*\*nephritis\*\*\*, diabetic nephropathy or \*\*\*tissue\*\*\*  
\*\*\*fibrosis\*\*\*, as well as the use of said compd. for the prodn. of  
pharmaceuticals for the above-mentioned use, and a method for inhibition  
of the overprodn. and accumulation of the \*\*\*extracellular\*\*\*  
\*\*\*matrix\*\*\*.

=> d his

(FILE 'HOME' ENTERED AT 13:55:45 ON 20 DEC 2002)

FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT  
13:56:06 ON 20 DEC 2002

L1 1971 S GALECTIN-3  
L2 479 S L1 (P) INHIBIT?  
L3 155632 S (EXTRACELLULAR MATRIX) OR (COLLAGEN ADJ IV)  
L4 1922 S (GLOMERULAR NEPHRITIS) OR (DIABETIC ADJ NEPHROPATHY) OR (TISS  
L5 226 S L3 (P) L4  
L6 1 S L5 (P) L1

=> s l2 (p) l3

L7 79 L2 (P) L3

=> duplicate remove l7

DUPLICATE PREFERENCE IS 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH'

KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n

PROCESSING COMPLETED FOR L7

L8 20 DUPLICATE REMOVE L7 (59 DUPLICATES REMOVED)

=> d l8 1-20 ibib abs

L8 ANSWER 1 OF 20 MEDLINE DUPLICATE 1  
ACCESSION NUMBER: 2002286224 MEDLINE  
DOCUMENT NUMBER: 22021193 PubMed ID: 11981832  
TITLE: Galectin-3 modulates carbohydrate-dependent thymocyte  
interactions with the thymic microenvironment.  
AUTHOR: Villa-Verde Dea Maria Serra; Silva-Monteiro Elizangela;  
Jasiulionis Miriam G; Farias-De-Oliveira Desio Aurelio;  
Brentani Ricardo Renzo; Savino Wilson; Chammas Roger  
CORPORATE SOURCE: Laboratory on Thymus Research, Department of Immunology,  
Oswaldo Cruz Institute, Oswaldo Cruz Foundation, Rio de  
Janeiro, Brazil.  
SOURCE: EUROPEAN JOURNAL OF IMMUNOLOGY, (2002 May) 32 (5) 1434-44.  
Journal code: 1273201. ISSN: 0014-2980.  
PUB. COUNTRY: Germany: Germany, Federal Republic of  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 200206  
ENTRY DATE: Entered STN: 20020528  
Last Updated on STN: 20020615 .  
Entered Medline: 20020614

AB The process of thymocyte differentiation occurs within the context of the  
thymic microenvironment, in which T cell precursors interact with thymic  
microenvironmental cells and \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\*.

Here we studied the expression of \*\*\*galectin\*\*\* - \*\*\*3\*\*\* a beta-galactoside binding lectin in the thymus of young adult mice. \*\*\*Galectin\*\*\* - \*\*\*3\*\*\* was found mainly in the medulla and to a lesser extent in the cortex. We further showed that distinct microenvironmental elements, such as thymic epithelial cells, the epithelial component of thymic nurse complexes and phagocytic cells of the thymic reticulum produce, secrete and accumulate \*\*\*galectin\*\*\* - \*\*\*3\*\*\* on the cell surface. Functionally, \*\*\*galectin\*\*\* - \*\*\*3\*\*\*-enriched medium \*\*\*inhibited\*\*\* in vitro thymocyte interactions with thymic microenvironmental cells, accelerated the release of thymocytes from thymic nurse cells and \*\*\*inhibited\*\*\* the reconstitution of these lymphoepithelial complexes. These effects were blocked by exogenous lactose (Galbeta1-4Glc), but not melibiose (Galalpha1-6Glc), and by a monospecific anti-\*\*\*galectin\*\*\* - \*\*\*3\*\*\* antibody. Recombinant \*\*\*galectin\*\*\* - \*\*\*3\*\*\* also \*\*\*inhibited\*\*\* thymocyte/thymic epithelial cell interactions. Our data indicate that intrathymically produced \*\*\*galectin\*\*\* - \*\*\*3\*\*\* disrupts thymocyte/microenvironmental cell interactions, thus acting as a de-adhesion molecule.

L8 ANSWER 2 OF 20 CAPLUS COPYRIGHT 2002 ACS DUPLICATE 2  
 ACCESSION NUMBER: 2002:705963 CAPLUS  
 TITLE: Galectins: Novel anti-inflammatory drug targets  
 AUTHOR(S): Liu, Fu-Tong  
 CORPORATE SOURCE: Department of Dermatology School of Medicine,  
 University of California-Davis, Sacramento, CA, 95817,  
 USA  
 SOURCE: Expert Opinion on Therapeutic Targets (2002), 6(4),  
 461-468  
 CODEN: EOTTAO; ISSN: 1472-8222  
 PUBLISHER: Ashley Publications Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Galectins are a protein family defined by their affinity for .beta.-galactosides and consensus sequences. They are pleiotropic regulators involved in a multitude of functions, both in and out of the cell. Extracellularly, they have the potential to bind to various surface receptors on a variety of cell types as well as \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* (ECM) proteins, thus causing cell activation or apoptosis, modulating cell adhesion and inducing cell migration. Intracellularly, they can regulate cell growth, apoptosis and cell cycle progression. Galectins are either pro-inflammatory or anti-inflammatory. Some, such as galectin-1, may be employed as anti-inflammatory agents, while others, such as \*\*\*galectin\*\*\* - \*\*\*3\*\*\*, are evidently suitable targets for anti-inflammatory drugs. The extracellular functions of galectins involve their lectin-carbohydrate interactions and thus their carbohydrate ligands or mimetics would be suitable \*\*\*inhibitors\*\*\*. While the intracellular functions of galectins do not appear to engage lectin-carbohydrate interactions, the carbohydrate-binding sites of these proteins may still be involved. Therefore, the same \*\*\*inhibitors\*\*\* may be used regardless of whether intracellular or extracellular galectins are to be targeted.

REFERENCE COUNT: 75 THERE ARE 75 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 20 MEDLINE DUPLICATE 3  
 ACCESSION NUMBER: 2002342426 IN-PROCESS  
 DOCUMENT NUMBER: 22080296 PubMed ID: 12083851  
 TITLE: Role of elastin-matrix interactions in tumor progression.  
 AUTHOR: Lapis Karoly; Timar Jozsef  
 CORPORATE SOURCE: First Department of Pathology and Experimental Cancer  
 Research, Semmelweis University, Budapest, H-1085, Hungary.  
 SOURCE: SEMINARS IN CANCER BIOLOGY, (2002 Jun) 12 (3) 209-17.  
 Journal code: 9010218. ISSN: 1044-579X.  
 PUB. COUNTRY: United States  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: IN-PROCESS; NONINDEXED; Priority Journals  
 ENTRY DATE: Entered STN: 20020627  
 Last Updated on STN: 20021211

AB Data from the literature now indicate that cancer cells can specifically interact with the unique \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* protein,

elastin. The interaction is mediated by two elastin-binding proteins (EBP), S-gal/EBP (organized in the elastin receptor/elastonection complex) and \*\*\*galectin\*\*\* - \*\*\*3\*\*\*, components of two laminin receptors. Studies revealed that the expression of both EBPs is closely associated to the invasive/metastatic potential of various cancer types. This is due to the fact that elastin-ligation of S-gal/EBP induces mitogenic, as well as mitogenic signals and releases various elastases from cancer cells and the induction depends on the metastatic potential. Studies also demonstrated that certain cancer cells can synthesize elastin and express lysyl oxydase, providing explanation for frequent appearance of elastic tissue in tumors such as breast or gastric cancers. Clinico-pathological data suggest some correlation with tumor progression of the presence of the elastic tumor stroma. Since elastic tissue may be a significant reservoir of angiostatic molecule(s) this \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* protein can also have a role in tumor-induced angiogenesis. Soluble elastin as well as elastin peptides are potent \*\*\*inhibitors\*\*\* of the metastatic process in experimental tumor models. On the other hand, elastin peptides can also be used to design targeted therapies exploiting the unique physicochemical nature of this matrix protein. Altogether, these data suggest a significant role for tumor cell-elastin interactions in tumor progression.

L8 ANSWER 4 OF 20 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:179383 CAPLUS  
 TITLE: N.epsilon.-(carboxymethyl)lysine-induced mesangial cell activation  
 AUTHOR(S): Lim, Hyun Jin; Song, Jaesook; Ha, Hunjoo; Lee, Hi Bahl  
 CORPORATE SOURCE: Department of Internal Medicine, Hyonam Kidney Laboratory, College of Medicine, Soon Chun Hyang University, Seoul, S. Korea  
 SOURCE: Taehan Sinjang Hakhoechi (2002), 21(1), 20-28  
 CODEN: TSHACY; ISSN: 1225-0015  
 PUBLISHER: Korean Society of Nephrology  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Korean

AB Background: Advanced glycation end products (AGE) are independent risk factors in the development and progression of diabetic nephropathy. Receptor for AGE (RAGE) is considered the main receptor involved in AGE-induced cell activation. \*\*\*Galectin\*\*\* - \*\*\*3\*\*\*, another AGE receptor, has recently been found up-regulated in mesangial cells (MC) cultured under high glucose and in diabetic rat kidneys. N.epsilon.-(carboxymethyl)lysine (CML) is a well characterized AGE but its role in MC activation is unknown. The present study examd. the effects of CML on MC proliferation and \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* (ECM) secretion. Methods: Synchronized rat MC were stimulated with different concns. of CML-bovine serum albumin (BSA), control BSA, and transforming growth factor-.beta.1 (TGF-.beta.1) for up to 72 h. Cell proliferation was measured by [3H]-thymidine incorporation. Fibronectin, TGF-.beta.1, plasminogen activator \*\*\*inhibitor\*\*\* (PAI)-1 secreted into the media and RAGE and \*\*\*galectin\*\*\* - \*\*\*3\*\*\* expression in MC were measured by Western blot anal. and ELISA Results: 1,000 .mu.g/mL of CML-BSA decreased [3H]-thymidine incorporation by MC at 48 h and 10 ng/mL TGF-.beta.1 at 24 and 48 h. CML-BSA 100 and 1,000 pg/mL, control BSA 1,000 pg/mL, and TGF 8 10 ng/mL increased fibronectin secretion at 48 h CML-BSA up to 1,000 pg/mL did not affect TGF B1 or PAI-1 secretion. TGF-.beta.1 10 ng/mL, however, significantly increased PAI-1 secretion. Cultured MC expressed both RAGE and galec- tin-3. CML-BSA 100 .mu.g/mL upregulated \*\*\*galectin\*\*\* - \*\*\*3\*\*\* expression. Conclusion: CML-BSA decreased MC proliferation and increased fibronectin secretion, suggesting that CML may lead to ECM accumulation and glomerulosclerosis in diabetic animals. MC express RAGE and \*\*\*galectin\*\*\* - \*\*\*3\*\*\* constitutively and CML-induced \*\*\*galectin\*\*\* - \*\*\*3\*\*\* upregulation may have a role in AGE-induced MC activation.

L8 ANSWER 5 OF 20

MEDLINE

DUPLICATE 4

ACCESSION NUMBER: 2001690890 MEDLINE  
 DOCUMENT NUMBER: 21599405 PubMed ID: 11735123  
 TITLE: Galectin-3 mediates the endocytosis of beta-1 integrins by breast carcinoma cells.  
 AUTHOR: Furtak V; Hatcher F; Ochieng J  
 CORPORATE SOURCE: Department of Biochemistry, Meharry Medical College, 1005 D. B. Todd Boulevard, Nashville, Tennessee 37208, USA.

CONTRACT NUMBER: 2G1RR03032 (NCRR)  
3 P30 CA68485 (NCI)  
GM 08037 (NIGMS)

SOURCE: BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, (2001  
Dec 14) 289 (4) 845-50.  
Journal code: 0372516. ISSN: 0006-291X.  
PUB. COUNTRY: United States  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 200202  
ENTRY DATE: Entered STN: 20011213  
Last Updated on STN: 20020222  
Entered Medline: 20020221

AB \*\*\*Galectin\*\*\* - \*\*\*3\*\*\*, a beta-galactoside binding lectin, has  
been demonstrated to play a key role(s) in cell to \*\*\*extracellular\*\*\*  
\*\*\*matrix\*\*\* interaction. The precise mechanism by which it modulates  
cellular adhesion is presently unclear and warrants further studies. We  
hereby report that \*\*\*galectin\*\*\* - \*\*\*3\*\*\* mediates the endocytosis  
of beta-1 integrins in a lactose-dependent manner. Interestingly we  
observed that \*\*\*galectin\*\*\* - \*\*\*3\*\*\* was also rapidly internalized  
by the cells via the same pathway and the internalization was completely  
blocked by lactose. The endocytosis process was temperature dependent and  
was \*\*\*inhibited\*\*\* by filipin but not chlorpromazine. The endocytosis  
of \*\*\*galectin\*\*\* - \*\*\*3\*\*\* and beta-1 integrins by the cells was  
accompanied by rapid cell spreading due to cytoskeletal reorganization.  
The data suggest a novel mechanism by which \*\*\*galectin\*\*\* - \*\*\*3\*\*\*  
and beta-1 integrins are internalized into breast carcinoma cells via a  
caveolae-like pathway of endocytosis.  
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L8 ANSWER 6 OF 20 MEDLINE DUPLICATE 5  
ACCESSION NUMBER: 2002031556 MEDLINE  
DOCUMENT NUMBER: 21595829 PubMed ID: 11759230  
TITLE: [Rheumatoid arthritis: new developments in the pathogenesis  
with special reference to synovial fibroblasts].  
Die Rheumatoide Arthritis: Neuentwicklungen in der  
Pathogenese unter besonderer Berücksichtigung der  
synovialen Fibroblasten.  
AUTHOR: Seemayer C A; Distler O; Kuchen S; Muller-Ladner U; Michel  
B A; Neidhart M; Gay R E; Gay S  
CORPORATE SOURCE: WHO-Collaborating Center for Molecular Biology and Novel  
Therapeutic Strategies of Rheumatic Diseases, Department of  
Rheumatology, University Hospital Zurich, Gloriastrasse 25,  
8091 Zurich, Switzerland.  
SOURCE: ZEITSCHRIFT FUR RHEUMATOLOGIE, (2001 Oct) 60 (5) 309-18.  
Ref: 67  
Journal code: 0414162. ISSN: 0340-1855.  
PUB. COUNTRY: Germany; Germany, Federal Republic of  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
General Review; (REVIEW)  
(REVIEW, TUTORIAL)  
LANGUAGE: German  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 200201  
ENTRY DATE: Entered STN: 20020124  
Last Updated on STN: 20020727  
Entered Medline: 20020130

AB Rheumatoid arthritis (RA) is a chronic inflammatory disease, which is  
mainly characterized by synovial hyperplasia, pathological immune  
phenomena and progressive destruction of the affected joints. Various cell  
types are involved in the pathogenesis of RA including T cells, antigen  
presenting cells, and endothelial cells. Recent experimental evidence  
suggests that the CD40/CD154 system might play an important role in the  
development of RA. Our experimental approach focuses on RA synovial  
fibroblasts (RA-SF) that are able to destroy articular cartilage  
independent of inflammation. To elucidate the specific role of those cells  
in RA pathophysiology the following questions are currently addressed: 1.  
Which mechanisms do activate the RA-SF? 2. How do the activated RA-SF  
attach to the cartilage? 3. How do RA-SF destroy cartilage and bone? Which  
mechanisms do activate the RA-SF? The process of activation is poorly  
understood. It is unclear, how far the synovial hyperplasia of RA

resembles tumor diseases. Along this line some contradictory results exist concerning the role of the tumor suppressor protein p53. Some investigations could show the expression of p53 in the synovial lining including p53 mutations in RA synovium and in RASF, while other research groups could not confirm these data. Our group has demonstrated that the tumor suppressor PTEN was less expressed in the synovial lining of RA than in normal synovium, but no PTEN mutations could be found in the RA-SF. In addition, the in vivo and in vitro expression of the anti-apoptotic molecule sentrin suggests a functional resistance of RA-SF to undergo apoptosis. Although it is still unclear, whether certain viruses or viral elements are involved in the pathogenesis of RA (cause, consequence or coincidence?), certain viruses could play a role in the pathogenesis of RA. The endogenous retroviral element L1 was found to be expressed in the synovial lining, at sites of invasion as well as in RA-SF grown in vitro. Moreover, the data indicate that after the initial activation of L1 downstream molecules such as the SAP kinase 4, the met-protooncogene and the \*\*\*galectin\*\*\* - \*\*\*3\*\*\* binding protein are upregulated. How do the activated RA-SF attach to the cartilage? It has been suggested that integrins mediate the attachment of RA-SF to fibronectin rich sites of cartilage. Intriguingly, other adhesion molecules such as the vascular cellular adhesion molecule-1 (VCAM) and CS-1, a splice variant of fibronectin, are synthesized by RA-SF. By binding to these adhesion molecules, lymphocytes that express the integrin VLA-4 could be stimulated and thereby maintain the inflammatory process. Osteopontin is an \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* protein, which is associated with matrix adhesion and metastasis in tumors. In RA synovium, osteopontin was detectable in the synovial lining and at sites of invasion. How do RA-SF destroy cartilage and bone? The destruction of cartilage and bone in RA is mediated by matrix metalloproteinases (MMPs) and cathepsins. MMPs exist as secreted and as membrane bound forms. In vitro models are being developed to simulate the invasive process of RA-SF. In an in vitro model developed in our laboratory, the treatment of RA-SF with anti-CD44 or anti-interleukin-1 (IL-1) minimized matrix degradation of RA-SF. On the other hand, co-culture of RA-SF and U937 cells as well as application of interleukin-1 beta (IL-1 beta) or tumor necrosis factor alpha (TNF alpha) increased the invasiveness of RA-SF. Gene transfer of bovine pancreas trypsin \*\*\*inhibitor\*\*\* (BPMI) or interleukin-10 (IL-10) reduced the invasion of RA-SF, while transduction of interleukin-1 receptor antagonist (IL-1Ra) was chondroprotective. Double gene transfer of IL-10 and IL-1Ra resulted in both \*\*\*inhibition\*\*\* of invasion and chondroprotection.

L8 ANSWER 7 OF 20 CAPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 2000:116925 CAPLUS  
 DOCUMENT NUMBER: 132:165131  
 TITLE: Pharmaceutical composition having inhibitory effect on overproduction and accumulation of extracellular matrix  
 INVENTOR(S): Sasaki, Satoshi; Sumi, Yoshihiko; Hughes, Reginald Colin  
 PATENT ASSIGNEE(S): Teijin Limited, Japan  
 SOURCE: PCT Int. Appl., 29 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000007624	A2	20000217	WO 1999-JP4238	19990805
WO 2000007624	A3	20000622		
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9950653	A1	20000228	AU 1999-50653	19990805
EP 1104307	A2	20010606	EP 1999-935073	19990805



R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO

JP 2002522398 T2 20020723 JP 2000-563306 19990805

PRIORITY APPLN. INFO.: JP 1998-233499 A 19980806

WO 1999-JP4238 W 19990805

AB A pharmaceutical compn. having an \*\*\*inhibitory\*\*\* effect on the overprodn. and the accumulation of \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\*, said compn. comprising as an active ingredient a compd. that \*\*\*inhibits\*\*\* the biol. activity of \*\*\*galectin\*\*\* - \*\*\*3\*\*\*, which pharmaceutical compn. can serve as a therapeutic or preventive agent for glomerular nephritis, diabetic nephropathy or tissue fibrosis, as well as the use of said compd. for the prodn. of pharmaceuticals for the above-mentioned use, and a method for \*\*\*inhibition\*\*\* of the overprodn. and accumulation of the \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\*.

L8 ANSWER 8 OF 20 MEDLINE DUPLICATE 6

ACCESSION NUMBER: 2000437353 MEDLINE  
DOCUMENT NUMBER: 20312836 PubMed ID: 10852818  
TITLE: Galectin-8 binding to integrins inhibits cell adhesion and induces apoptosis.  
AUTHOR: Hadari Y R; Arbel-Goren R; Levy Y; Amsterdam A; Alon R; Zakut R; Zick Y  
CORPORATE SOURCE: Department of Molecular Cell Biology, The Weizmann Institute of Science, Rehovot 76100, Israel.  
lizick@weizmann. weizmann.ac.il.  
SOURCE: JOURNAL OF CELL SCIENCE, (2000 Jul) 113 ( Pt 13) 2385-97.  
Journal code: 0052457. ISSN: 0021-9533.  
PUB. COUNTRY: ENGLAND: United Kingdom  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals; Space Life Sciences  
ENTRY MONTH: 200009  
ENTRY DATE: Entered STN: 20000928  
Last Updated on STN: 20000928  
Entered Medline: 20000918

AB The interaction of cells with the \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* regulates cell adhesion, motility, growth, survival and differentiation through integrin-mediated signal transduction. Here we demonstrate that galectin-8, a secreted mammalian (beta)-galactoside binding protein, \*\*\*inhibits\*\*\* adhesion of human carcinoma (1299) cells to plates coated with integrin ligands, and induces cell apoptosis. Pretreatment of the cells with Mn(2+), which increases the affinity of integrins for their ligands, abolished the \*\*\*inhibitory\*\*\* effects of galectin-8. The \*\*\*inhibitory\*\*\* effects of galectin-8 were specific and were not mimicked by plant lectins or other galectins (galectin-1 and \*\*\*galectin\*\*\* - \*\*\*3\*\*\*). In accordance with its anti-adhesive effects, transfection of galectin-8 cDNA into 1299 cells significantly reduced (by 75%) colony formation, when compared to the number of colonies formed by cells transfected with an empty vector. Affinity chromatography over immobilized galectin-8 indicated that few membrane proteins interacted with galectin-8 in a sugar-dependent manner. Microsequencing and western immunoblotting revealed that (alpha)(3)(beta)(1) integrin derived from 1299 as well as other cells (e.g. HeLa and human endothelial cells) is a major galectin-8 binding-protein. Furthermore, immunoprecipitation and immunohistochemical studies suggested that endogenous galectin-8, secreted from 1299 cells, forms complexes with (alpha)(3)(beta)(1) integrins expressed on the surface of 1299 cells. Galectin-8 also interacts with other members of the integrin family, like (alpha)(6)(beta)(1) integrins. In contrast, galectin-8 only minimally interacts with (alpha)(4) or (beta)(3) integrins. We propose that galectin-8 is an integrin binding-protein that interacts to a different extent with several, but not all members of the integrin family. Binding of galectin-8 modulates integrin interactions with the \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* and thus regulates cell adhesion and cell survival.

L8 ANSWER 9 OF 20 MEDLINE DUPLICATE 7

ACCESSION NUMBER: 2001116407 MEDLINE  
DOCUMENT NUMBER: 20521978 PubMed ID: 11068143  
TITLE: Stabilization of neurites in cerebellar granule cells by transglutaminase activity: identification of midkine and

galectin-3 as substrates.  
 AUTHOR: Mahoney S A; Wilson M; Smith S; Haynes L W  
 CORPORATE SOURCE: School of Biological Sciences, University of Bristol,  
 Woodland Road, Bristol BS8 1UG, UK.  
 SOURCE: NEUROSCIENCE, (2000) 101 (1) 141-55.  
 Journal code: 7605074. ISSN: 0306-4522.  
 PUB. COUNTRY: United States  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 200102  
 ENTRY DATE: Entered STN: 20010322  
 Last Updated on STN: 20010322  
 Entered Medline: 20010215

AB The formation of covalent isopeptide cross-links between cell surface protein molecules by the enzyme transglutaminase C influences cell adhesion and morphology. Retinoid-inducible cross-linking activity associated with this enzyme is present in the developing rat cerebellar cortex [Perry M. J. M. et al. (1995) Neuroscience 65, 1063-1076]. A monoclonal antibody was used to localize transglutaminase C to granule neurons in the developing cerebellar cortex. The enzyme was inducible by retinoic acid both in granule neurons cultured from postnatal rat cerebellar cortex and in cells of the embryonic dorsal rhombic lip, which contain granule neuron precursors. A possible biological function for transglutaminase activity was investigated in living granule neurons, cultured on a biomatrix substratum, studied by time-lapse cinematographic analysis using the transglutaminase inactivator RS-48373-007.  
 \*\*\*Inhibition\*\*\* of cross-linking activity did not influence the number of neurites formed by granule neurons, but caused the destabilization of neurites during the initial outgrowth period, seen as an increase in the number of growth cone retractions and the onset of premature axon collateral formation (bifurcation). Inactivation of cross-linking activity prevented the formation of fascicles between neurites only when cells were cultured on a biomatrix surface. Two glial proteins involved in cell-  
 \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* interactions, midkine and  
 \*\*\*galectin\*\*\* - \*\*\*3\*\*\*, were identified as putative substrates for granule neuron transglutaminase. The results suggest that covalent cross-link formation by transglutaminase C or a related enzyme generates multimeric molecular forms of glial-derived proteins, and plays a role in stabilizing newly formed neurites. A possible non-pathological role for transglutaminase in the control of axon collateral branching by developing granule neurons in the cerebellar cortex is discussed.

L8 ANSWER 10 OF 20 MEDLINE DUPLICATE 8

ACCESSION NUMBER: 1998169377 MEDLINE  
 DOCUMENT NUMBER: 98169377 PubMed ID: 9501082  
 TITLE: Mac-2 binding protein is a cell-adhesive protein of the extracellular matrix which self-assembles into ring-like structures and binds beta1 integrins, collagens and fibronectin.  
 AUTHOR: Sasaki T; Brakebusch C; Engel J; Timpl R  
 CORPORATE SOURCE: Max-Planck-Institut f r Biochemie, D-82152 Martinsried, Germany.  
 SOURCE: EMBO JOURNAL, (1998 Mar 16) 17 (6) 1606-13.  
 Journal code: 8208664. ISSN: 0261-4189.  
 PUB. COUNTRY: ENGLAND: United Kingdom  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199804  
 ENTRY DATE: Entered STN: 19980507  
 Last Updated on STN: 19980507  
 Entered Medline: 19980424

AB Human Mac-2 binding protein (M2BP) was prepared in recombinant form from the culture medium of 293 kidney cells and consisted of a 92 kDa subunit. The protein was obtained in a native state as indicated by CD spectroscopy, demonstrating alpha-helical and beta-type structure, and by protease resistance and immunological analysis. It was highly modified by N- and O-glycosylation but not by glycosaminoglycans. Ultracentrifugation showed non-covalent association into oligomers with molar masses of 1000-1500 kDa. Electron microscopy showed ring-like shapes with diameters of 30-40 nm. M2BP bound in solid-phase assays to collagens IV, V and VI,

fibronectin and nidogen, but not to fibrillar collagens I and III or other basement membrane proteins. The protein also mediated adhesion of cell lines at comparable strength with laminin. Adhesion to M2BP was \*\*\*inhibited\*\*\* by antibodies to integrin beta1 subunits but not to alpha2 and alpha6 subunits, RGD peptide or lactose. This distinguishes cell adhesion of M2BP from that of laminin and excludes involvement of lactose-binding \*\*\*galectin\*\*\* - \*\*\*3\*\*\*. Immunological assays demonstrated variable secretion by cultured human cells of M2BP, which was detected in the \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* of several mouse tissues.

L8 ANSWER 11 OF 20 MEDLINE DUPLICATE 9  
 ACCESSION NUMBER: 1999061340 MEDLINE  
 DOCUMENT NUMBER: 99061340 PubMed ID: 9846883  
 TITLE: Cell activation by glycated proteins. AGE receptors, receptor recognition factors and functional classification of AGEs.  
 AUTHOR: Thornalley P J  
 CORPORATE SOURCE: Department of Biological Sciences, University of Essex, Colchester, UK.  
 SOURCE: CELLULAR AND MOLECULAR BIOLOGY, (1998 Nov) 44 (7) 1013-23. Ref: 70  
 Journal code: 9216789. ISSN: 0145-5680.  
 PUB. COUNTRY: France  
 DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
 General Review; (REVIEW)  
 (REVIEW, TUTORIAL)  
 LANGUAGE: English  
 FILE SEGMENT: Priority Journals  
 ENTRY MONTH: 199902  
 ENTRY DATE: Entered STN: 19990311  
 Last Updated on STN: 19990311  
 Entered Medline: 19990222

AB Proteins modified by advanced glycation endproducts (AGE) bind to cell surface receptors and other AGE binding proteins. AGE-binding receptors are: scavenger receptors types I and II, the receptor for advanced glycation endproducts (RAGE), oligosaccharyl transferase-48 (OST-48, AGE-R1), 80K-H phosphoprotein (AGE-R2) and \*\*\*galectin\*\*\* - \*\*\*3\*\*\* (AGE-R3). AGE receptors are found in monocytes, macrophages, endothelial cells, pericytes, podocytes, astrocytes and microglia. AGE-modified proteins also bind to lysozyme and lactoferrin. A critical review of the evidence for receptors binding AGE-modified protein binding in vivo is presented. Scavenger receptors have only been shown to bind proteins modified by AGE to a much higher extent than found in vivo. 80K-H phosphoprotein is involved in FGFR3 signal transduction to MAP kinase, and may be involved in AGE-receptor signal transduction. Whether all of these proteins bind AGE-modified proteins in vivo is not yet clear. Cell activation in response to AGE-modified proteins is associated with increased expression of \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* proteins, vascular adhesion molecules, cytokines and growth factors. Depending on the cell type and concurrent signaling, this is associated with chemotaxis, angiogenesis, oxidative stress, cell proliferation or programmed cell death (PCD). Receptor recognition factors for agonism at the AGE receptor have been little studied but to date hydroimidazolones appear to be the most likely candidates. Pharmacologic \*\*\*inhibition\*\*\* of AGE receptor-mediated cell activation with specific antagonists may provide the basis for therapeutic intervention in diseases where AGE accumulation is a suspected etiological factor vascular complications of diabetes, macrovascular disease, renal insufficiency and Alzheimer's disease.

L8 ANSWER 12 OF 20 MEDLINE DUPLICATE 10  
 ACCESSION NUMBER: 1998289609 MEDLINE  
 DOCUMENT NUMBER: 98289609 PubMed ID: 9618290  
 TITLE: Regulation of cellular adhesion to extracellular matrix proteins by galectin-3.  
 AUTHOR: Ochieng J; Leite-Browning M L; Warfield P  
 CORPORATE SOURCE: Department of Biochemistry, Meharry Medical College, Nashville, Tennessee 37208, USA.. ochien10@ccvax.mmc.edu  
 CONTRACT NUMBER: K14 CA 68281 (NCI)  
 SOURCE: BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, (1998 May 29) 246 (3) 788-91.

Journal code: 0372516. ISSN: 0006-291X.  
PUB. COUNTRY: United States  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199807  
ENTRY DATE: Entered STN: 19980716  
Last Updated on STN: 19980716  
Entered Medline: 19980702

AB The control of cellular adhesion to \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* proteins is poorly understood. In the present analyses, we set out to test the hypothesis that high \*\*\*galectin\*\*\* - \*\*\*3\*\*\* concentration on the cell surface downregulates cellular adhesion to the \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* proteins. Various tumor cell lines were briefly incubated without or with \*\*\*galectin\*\*\* - \*\*\*3\*\*\* and then allowed to adhere to wells coated with laminin-1, collagen IV and fibronectin. Our data demonstrated that the cells which were incubated with \*\*\*galectin\*\*\* - \*\*\*3\*\*\* prior to plating had significantly reduced adhesion to \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* proteins. This \*\*\*inhibition\*\*\* involved the carbohydrate recognition domain of the lectin because adhesion was achieved in the presence of \*\*\*galectin\*\*\* - \*\*\*3\*\*\* and lactose but not \*\*\*galectin\*\*\* - \*\*\*3\*\*\* and sucrose. Furthermore we demonstrated that \*\*\*galectin\*\*\* - \*\*\*3\*\*\* associates with alpha 1 beta 1 integrin in a lactose dependent manner.

L8 ANSWER 13 OF 20 MEDLINE DUPLICATE 11  
ACCESSION NUMBER: 1998126140 MEDLINE  
DOCUMENT NUMBER: 98126140 PubMed ID: 9466664  
TITLE: Invasion potential and N-acetylgalactosamine expression in a human melanoma model.  
AUTHOR: Rye P D; Fodstad O; Emilsen E; Bryne M  
CORPORATE SOURCE: Department of Tumour Biology, Institute for Cancer Research, The Norwegian Radium Hospital, Oslo..  
prye@radium.uio.no  
SOURCE: INTERNATIONAL JOURNAL OF CANCER, (1998 Feb 9) 75 (4) 609-14.  
Journal code: 0042124. ISSN: 0020-7136.  
PUB. COUNTRY: United States  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199802  
ENTRY DATE: Entered STN: 19980306  
Last Updated on STN: 19980306  
Entered Medline: 19980226

AB Reactivity of the N-acetylgalactosamine-binding Helix pomatia agglutinin (HPA) in tumours has been associated with poor prognosis and metastasis development. In our LOX/FEMX-I human melanoma model, the binding of HPA correlates with experimental lung metastasis formation in athymic nude mice. In the present study, the metastatic potential of 2 human melanoma cell lines (LOX and FEMX-I) was assessed in relation to carbohydrate and invasive phenotype. Immunocytological and invasion assays highlighted significant differences between these 2 cell lines. Immuno-cytochemical analysis confirmed the widespread expression of HPA-binding glycoconjugates on LOX but not FEMX-I cells. One of these HPA-binding glycoconjugates, the Tn antigen, was expressed highly on the surface of LOX cells but only weakly in the cytoplasm of FEMX-I cells. The sialyl Tn antigen was expressed in FEMX-I but not in LOX cells. There was no difference between the cell lines in adhesion/rate of trapping in athymic nude mouse lung tissues. In Matrigel invasion assays, LOX cells demonstrated an invasion potential more than 6 times greater than that observed with FEMX-I cells. Matrigel invasion of LOX cells was \*\*\*inhibited\*\*\* after incubation with HPA (89%) compared to controls with HPA and GalNAc blocking sugar or without HPA ( $p < 0.0005$  at 5 df). In contrast, there was no \*\*\*inhibitory\*\*\* effect with the anti-Tn antibody IE3. Invasion of FEMX-I cells was not affected by the lectin and the IE3 antibody. Immuno-cytochemical analysis revealed expression of the terminal galactose- and polygalactosamine-binding lectin \*\*\*galectin\*\*\* \*\*\*3\*\*\* (Mac-2) in these melanoma cell lines. Expression of both the lectin and its receptor may be a contributory feature in the pulmonary invasion of LOX melanoma cells. Overall, our findings suggest that

HPA-binding glycoconjugates other than the alphaGalNAc-O-Ser/Thr of the Tn antigen may be important in the \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* invasion of LOX melanoma cells.

L8 ANSWER 14 OF 20 MEDLINE DUPLICATE 12  
ACCESSION NUMBER: 1998111032 MEDLINE  
DOCUMENT NUMBER: 98111032 PubMed ID: 9450571  
TITLE: Preferential adhesion of prostate cancer cells to a human bone marrow endothelial cell line.  
COMMENT: Comment in: J Natl Cancer Inst. 1998 Apr 1;90(7):547  
Comment in: J Natl Cancer Inst. 1998 Jan 21;90(2):84-5  
AUTHOR: Lehr J E; Pienta K J  
CORPORATE SOURCE: University of Michigan Comprehensive Cancer Center,  
Department of Internal Medicine, Ann Arbor 48109-0946, USA.  
CONTRACT NUMBER: CA60156 (NCI)  
CA69568 (NCI)  
SOURCE: JOURNAL OF THE NATIONAL CANCER INSTITUTE, (1998 Jan 21) 90  
(2) 118-23.  
Journal code: 7503089. ISSN: 0027-8874.  
PUB. COUNTRY: United States  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199802  
ENTRY DATE: Entered STN: 19980224  
Last Updated on STN: 19990129  
Entered Medline: 19980210

AB BACKGROUND: In virtually all patients with advanced prostate cancer, the disease metastasizes to bone and causes osteoblastic growth. However, the mechanisms that contribute to bone metastasis are poorly understood. It has been hypothesized that the bone provides a favorable growth environment for prostate cancer cells, which nonselectively seed the bone marrow from the bloodstream. Alternatively, prostate cancer cells may preferentially bind to bone marrow endothelial cells. We developed an in vitro model of bone endothelium and tested the hypothesis that prostate cancer cells adhere preferentially to bone marrow endothelial cells. METHODS: We isolated and characterized a human bone marrow endothelial (HBME-1) cell line. Cells were transfected with the simian virus 40 large T antigen for immortalization. Cell surface receptors were characterized by immunohistochemistry and flow cytometry. The adhesion of cancer cells to HBME-1 and to endothelial cell lines from other organs was tested in an in vitro binding assay as were \*\*\*inhibitors\*\*\* of adhesion. RESULTS: The immortalized HBME-1 cell line demonstrated many properties characteristic of endothelial cells, including positive staining for von Willibrand factor and rapid formation of tubule structures when exposed to \*\*\*extracellular\*\*\* \*\*\*matrices\*\*\*. In an in vitro assay, prostate cancer cells adhered preferentially to human bone marrow endothelium when compared with endothelium derived from other sources. Preferential adhesion was blocked, in part, by antibodies to \*\*\*galectin\*\*\* - \*\*\*3\*\*\* and LFA-1. IMPLICATIONS: These data suggest that the propensity of prostate cancer cells to establish themselves in bone is due, at least in part, to their preferential adhesion to human bone marrow endothelial cells.

L8 ANSWER 15 OF 20 MEDLINE DUPLICATE 13  
ACCESSION NUMBER: 97385520 MEDLINE  
DOCUMENT NUMBER: 97385520 PubMed ID: 9241534  
TITLE: Galectin-3 inhibits granulocyte-macrophage colony-stimulating factor (GM-CSF)-driven rat bone marrow cell proliferation and GM-CSF-induced gene transcription.  
AUTHOR: Krugluger W; Frigeri L G; Lucas T; Schmer M; Forster O; Liu F T; Boltz-Nitulescu G  
CORPORATE SOURCE: Institute of General and Experimental Pathology, Vienna, Austria.  
CONTRACT NUMBER: AI 20958 (NIAID)  
AI 32834 (NIAID)  
SOURCE: IMMUNOBIOLOGY, (1997 Jun) 197 (1) 97-109.  
Journal code: 8002742. ISSN: 0171-2985.  
PUB. COUNTRY: GERMANY: Germany, Federal Republic of  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals

ENTRY MONTH: 199708  
ENTRY DATE: Entered STN: 19970916  
Last Updated on STN: 19970916  
Entered Medline: 19970829

AB The expression of \*\*\*galectin\*\*\* - \*\*\*3\*\*\* (formerly known as IgE-binding protein or Mac-2) in rat bone marrow (BM) was investigated by FACS, immunocytochemical and immunoblot analysis. The functional significance of rat recombinant \*\*\*galectin\*\*\* - \*\*\*3\*\*\* on mouse recombinant granulocyte-macrophage colony-stimulating factor (GM-CSF)-driven proliferation of macrophage progenitors and gene transcription was further examined. Immunocytochemical analysis of in situ BM sections demonstrated \*\*\*galectin\*\*\* - \*\*\*3\*\*\* in myelopoietic cells and surrounding stroma, whereas erythropoietic and lymphopoietic environments essentially lacked \*\*\*galectin\*\*\* - \*\*\*3\*\*\* expression. FACS analysis demonstrated that incubation of freshly isolated BMC with lactose, a competing ligand for \*\*\*galectin\*\*\* - \*\*\*3\*\*\* binding to glycoconjugates, decreased binding of anti-galectin antibodies to cells primarily expressing the myeloid antigen recognized by mAb His-54. Similarly, lectin-mediated binding of exogenous \*\*\*galectin\*\*\* - \*\*\*3\*\*\* to myeloid lineage cells was also demonstrated. Immunoblot analysis of BM eluates demonstrated \*\*\*galectin\*\*\* - \*\*\*3\*\*\* both in the \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* and in a lactose elutable form, bound to the surface of BMC. [3H]Thymidine incorporation studies on BMC cultured in the presence of \*\*\*galectin\*\*\* - \*\*\*3\*\*\* demonstrated suppression of GM-CSF-induced proliferation by \*\*\*galectin\*\*\* - \*\*\*3\*\*\*. In addition, differential display analysis of immediate early gene expression in BMC cultured in the presence of \*\*\*galectin\*\*\* - \*\*\*3\*\*\* revealed a 76.2% \*\*\*inhibition\*\*\* of GM-CSF-induced gene transcription by \*\*\*galectin\*\*\* - \*\*\*3\*\*\* assessed by the number of PCR-fragments generated. Our data suggest a role for \*\*\*galectin\*\*\* - \*\*\*3\*\*\* in the organization of myelopoietic compartments in rat BM and regulation of the action of growth factors on myelopoietic precursor cells.

L8 ANSWER 16 OF 20 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:217993 CAPLUS  
TITLE: Role of galectin-3 in the attachment of cells to extracellular matrixes.  
AUTHOR(S): Lawrence, Cynthia D.; Ochieng, Josiah  
CORPORATE SOURCE: Div. Science and Math, Rust College, Holly Springs, MS, 38635, USA  
SOURCE: Book of Abstracts, 211th ACS National Meeting, New Orleans, LA, March 24-28 (1996), CHED-147. American Chemical Society: Washington, D. C.  
CODEN: 62PIAJ  
DOCUMENT TYPE: Conference; Meeting Abstract  
LANGUAGE: English

AB The study of cell attachment to \*\*\*extracellular\*\*\* \*\*\*matrixes\*\*\* is very interesting. We questioned whether \*\*\*galectin\*\*\* - \*\*\*3\*\*\* has a possible role in the attachment of cells to \*\*\*extracellular\*\*\* \*\*\*matrixes\*\*\*. \*\*\*Galectin\*\*\* - \*\*\*3\*\*\* is a sugar binding lectin contg. a collagen-like sequence that has been identified in human tumor cells. \*\*\*Extracellular\*\*\* \*\*\*matrixes\*\*\* are several different structures such as laminin, fibronectin, and collagen type IV. A lectin such as \*\*\*galectin\*\*\* - \*\*\*3\*\*\* modulates the attachment to \*\*\*extracellular\*\*\* \*\*\*matrixes\*\*\*. We performed several expts. such as the construction of the expression gene in the E. coli bacteria, isolation and purifn. of \*\*\*galectin\*\*\* - \*\*\*3\*\*\* which was produced by the bacteria, a hemagglutination assay was done to show whether the protein was present, electron microscopy (dialysis), and a gel filtration column was run. After performing these expts., it can be detd. whether \*\*\*galectin\*\*\* - \*\*\*3\*\*\* has a roll in cell attachment to \*\*\*extracellular\*\*\* \*\*\*matrixes\*\*\*. Using serial dilns. of the concd. protein stock, we found that in increased concns., the \*\*\*galectin\*\*\* - \*\*\*3\*\*\* \*\*\*inhibited\*\*\* attachment. These results were ideal in suggesting that this protein ( \*\*\*galectin\*\*\* - \*\*\*3\*\*\* ) does affect cell attachment to \*\*\*extracellular\*\*\* \*\*\*matrixes\*\*\*.

L8 ANSWER 17 OF 20 MEDLINE  
ACCESSION NUMBER: 96034317 MEDLINE  
DOCUMENT NUMBER: 96034317 PubMed ID: 7593320

DUPLICATE 14

TITLE: Galectin-3 expression and effects on cyst enlargement and tubulogenesis in kidney epithelial MDCK cells cultured in three-dimensional matrices in vitro.

AUTHOR: Bao Q; Hughes R C

CORPORATE SOURCE: National Institute for Medical Research, Mill Hill, London, UK.

SOURCE: JOURNAL OF CELL SCIENCE, (1995 Aug) 108 ( Pt 8) 2791-800.  
Journal code: 0052457. ISSN: 0021-9533.

PUB. COUNTRY: ENGLAND: United Kingdom

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199512

ENTRY DATE: Entered STN: 19960124  
Last Updated on STN: 19970203  
Entered Medline: 19951215

AB \*\*\*Galectin\*\*\* - \*\*\*3\*\*\* is a member of a closely related family of beta-galactoside-binding soluble proteins found in many vertebrate epithelial and myeloid cell types. The developmentally regulated presence of \*\*\*galectin\*\*\* - \*\*\*3\*\*\* in tissues, for example kidney, and an affinity for many cell-surface and matrix glycoproteins indicate its importance in extracellular biological processes. Since a polarised expression and secretion of \*\*\*galectin\*\*\* - \*\*\*3\*\*\* was observed in monolayer-cultured MDCK cells, an understanding of the secretion and distribution of this lectin in a three-dimensional in vitro model would help to uncover its role(s) in the interplay between cell-surface adhesion molecules and \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* components occurring during cell aggregation and polarisation in tissue formation. In this study, the cellular distribution and secretion of \*\*\*galectin\*\*\* - \*\*\*3\*\*\* were examined in MDCK cells cultured within a gel matrix. MDCK cells were cultured within type I collagen or Matrigel to obtain multicellular cysts, and tubule formation was induced in collagen gels with hepatocyte growth factor. Immunofluorescent staining of these structures using antibodies against \*\*\*galectin\*\*\* - \*\*\*3\*\*\* and other cell-surface domain markers was carried out either in situ or on cryosections and was visualised by confocal and conventional epifluorescence microscopy. Our results show that MDCK cells suspended in hydrated collagen gels or Matrigel exhibit differential and polarised \*\*\*galectin\*\*\* - \*\*\*3\*\*\* expression on the baso-lateral surface domains of cells lining the cysts. The lectin is colocalised with laminin on the basal surface. In tubule-forming cysts, \*\*\*galectin\*\*\* - \*\*\*3\*\*\* is excluded from the initial spikes and the progressing tips of the tubules although its basolateral expression on the cyst body remains. \*\*\*Galectin\*\*\* - \*\*\*3\*\*\* added exogenously to cultures, as well as antibodies against laminin subunits and integrin beta 1 subunit, exerted an \*\*\*inhibitory\*\*\* effect on cyst enlargement of MDCK cells in 3-D Matrigel while \*\*\*galectin\*\*\* - \*\*\*3\*\*\* -specific antibodies could promote this process. The results suggest that \*\*\*galectin\*\*\* - \*\*\*3\*\*\* exerts its effect on MDCK cells in a three-dimensional environment through modulation of both cell-cell and cell-substratum adhesions, and the interplay between these adhesions is important in the growth of multicellular aggregates and extensions occurring during normal kidney tubulogenesis.

L8 ANSWER 18 OF 20 MEDLINE DUPLICATE 15

ACCESSION NUMBER: 95279975 MEDLINE

DOCUMENT NUMBER: 95279975 PubMed ID: 7539053

TITLE: Galectin-3, a beta-galactoside-binding animal lectin, binds to neural recognition molecules.

AUTHOR: Probstmeier R; Montag D; Schachner M

CORPORATE SOURCE: Department of Neurobiology, Swiss Federal Institute of Technology, Zurich.

SOURCE: JOURNAL OF NEUROCHEMISTRY, (1995 Jun) 64 (6) 2465-72.  
Journal code: 2985190R. ISSN: 0022-3042.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199506

ENTRY DATE: Entered STN: 19950707  
Last Updated on STN: 19970203  
Entered Medline: 19950628

AB In this study, we have investigated the ability of \*\*\*galectin\*\*\* -  
\*\*\*3\*\*\*, a beta-galactoside binding animal lectin, to interact in vitro  
with different neural tissue-derived glycoproteins involved in cell-cell  
and cell-substrate adhesion. \*\*\*Galectin\*\*\* - \*\*\*3\*\*\* interacted to  
varying degrees with the cell recognition molecules L1, the  
myelin-associated glycoprotein, and the neural cell adhesion molecule and  
the \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* molecules tenascin-C and  
tenascin-R but not with collagen type I. Binding of \*\*\*galectin\*\*\* -  
\*\*\*3\*\*\* to the different glycoproteins tested was carbohydrate dependent  
and could be specifically \*\*\*inhibited\*\*\* by the addition of lactose  
and, to a lesser extent, galactose.

L8 ANSWER 19 OF 20 MEDLINE DUPLICATE 16  
ACCESSION NUMBER: 95210903 MEDLINE  
DOCUMENT NUMBER: 95210903 PubMed ID: 7696855  
TITLE: Effects of natural complex carbohydrate (citrus pectin) on  
murine melanoma cell properties related to galectin-3  
functions.  
AUTHOR: Inohara H; Raz A  
CORPORATE SOURCE: Cancer Metastasis Program, Michigan Cancer Foundation,  
Detroit 48201.  
CONTRACT NUMBER: R01-CA46120 (NCI)  
SOURCE: GLYCOCONJUGATE JOURNAL, (1994 Dec) 11 (6) 527-32.  
Journal code: 8603310. ISSN: 0282-0080.  
PUB. COUNTRY: ENGLAND: United Kingdom  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199505  
ENTRY DATE: Entered STN: 19950510  
Last Updated on STN: 19980206  
Entered Medline: 19950504

AB Citrus pectin (CP) and pH-modified citrus pectin (MCP) are highly branched  
and non-branched complex polysaccharides, respectively, rich in  
galactoside residues, capable of combining with the carbohydrate-binding  
domain of \*\*\*galectin\*\*\* - \*\*\*3\*\*\*. We reported previously that  
intravenous injection of B16-F1 murine melanoma cells with CP or MCP into  
syngeneic mice resulted in a significant increase or decrease of lung  
colonization, respectively (Platt D, Raz A (1992) J Natl Cancer Inst  
84:438-42). Here we studied the effects of these polysaccharides on  
cell-cell and cell-matrix interactions mediated by carbohydrate-  
recognition. MCP, but not CP, \*\*\*inhibited\*\*\* B16-F1 melanoma cells  
adhesion to laminin and asialofetuin-induced homotypic aggregation. Both  
polysaccharides \*\*\*inhibited\*\*\* anchorage-independent growth of B16-F1  
cells in semisolid medium, i.e. agarose. These results indicate that  
carbohydrate-recognition by cell surface \*\*\*galectin\*\*\* - \*\*\*3\*\*\*  
may be involved in cell- \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\*  
interaction and play a role in anchorage-independent growth as well as the  
in vivo embolization of tumour cells.

L8 ANSWER 20 OF 20 MEDLINE DUPLICATE 17  
ACCESSION NUMBER: 95210895 MEDLINE  
DOCUMENT NUMBER: 95210895 PubMed ID: 7696849  
TITLE: Expression of galectins on microvessel endothelial cells  
and their involvement in tumour cell adhesion.  
AUTHOR: Lotan R; Belloni P N; Tressler R J; Lotan D; Xu X C;  
Nicolson G L  
CORPORATE SOURCE: Department of Tumor Biology, University of Texas, M.D.  
Anderson Cancer Center, Houston 77030.  
CONTRACT NUMBER: CA39319 (NCI)  
P30-CA16672 (NCI)  
R35-CA44352 (NCI)  
SOURCE: GLYCOCONJUGATE JOURNAL, (1994 Oct) 11 (5) 462-8.  
Journal code: 8603310. ISSN: 0282-0080.  
PUB. COUNTRY: ENGLAND: United Kingdom  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: English  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199505  
ENTRY DATE: Entered STN: 19950510  
Last Updated on STN: 19970203  
Entered Medline: 19950504



AB Lactoside-binding lectins (galectins) with molecular weights of about 14.5 kDa (galectin-1) and 29-35 kDa (\*\*\*galectin\*\*\* - \*\*\*3\*\*\* ) and preferentially to polylactosaminoglycan-containing glycoconjugates and have been found on the surface of tumour cells and implicated in cell-cell and cell- \*\*\*extracellular\*\*\* \*\*\*matrix\*\*\* adhesion and metastasis. We have demonstrated by immunoblotting that both galectin-1 and \*\*\*galectin\*\*\* - \*\*\*3\*\*\* are present in extracts of endothelial cells cultured from bovine aorta, rat lung, mouse lung and mouse brain microvessels, whereas mouse hepatic sinusoidal endothelial cells expressed primarily galectin-1. These galectins were also localized by indirect immunofluorescent labelling on the surface of the different endothelial cells in culture and by immunohistochemical staining in human tissues in vivo. Anti-galectin-1 antibodies \*\*\*inhibited\*\*\* the adhesion of liver-preferring murine RAW117-H10 large-cell lymphoma cells to hepatic sinusoidal endothelial cells or lung microvessel endothelial cells in vitro. The data indicate that galectin-1 is expressed on the extracellular surface of endothelial cells and can mediate in part the adhesion of RAW117-H10 cells to liver microvessel endothelial cells.

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(FILE 'HOME' ENTERED AT 13:55:45 ON 20 DEC 2002)

FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT 13:56:06 ON 20 DEC 2002

L1 1971 S GALECTIN-3  
L2 479 S L1 (P) INHIBIT?  
L3 155632 S (EXTRACELLULAR MATRIX) OR (COLLAGEN ADJ IV)  
L4 1922 S (GLOMERULAR NEPHRITIS) OR (DIABETIC ADJ NEPHROPATHY) OR (TISS  
L5 226 S L3 (P) L4  
L6 1 S L5 (P) L1  
L7 79 S L2 (P) L3  
L8 20 DUPLICATE REMOVE L7 (59 DUPLICATES REMOVED)

=> s l2 (p) l4

L9 1 L2 (P) L4

=> s l9 not l6

L10 0 L9 NOT L6

=> d his

(FILE 'HOME' ENTERED AT 13:55:45 ON 20 DEC 2002)

FILE 'MEDLINE, CAPLUS, BIOSIS, EMBASE, SCISEARCH, AGRICOLA' ENTERED AT 13:56:06 ON 20 DEC 2002

L1 1971 S GALECTIN-3  
L2 479 S L1 (P) INHIBIT?  
L3 155632 S (EXTRACELLULAR MATRIX) OR (COLLAGEN ADJ IV)  
L4 1922 S (GLOMERULAR NEPHRITIS) OR (DIABETIC ADJ NEPHROPATHY) OR (TISS  
L5 226 S L3 (P) L4  
L6 1 S L5 (P) L1  
L7 79 S L2 (P) L3  
L8 20 DUPLICATE REMOVE L7 (59 DUPLICATES REMOVED)  
L9 1 S L2 (P) L4  
L10 0 S L9 NOT L6

=> log y

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

46.44

46.65

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

-3.10

-3.10

STN INTERNATIONAL LOGOFF AT 14:02:14 ON 20 DEC 2002